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Moleculin Announces Significant Discovery with Potential to Treat Pancreatic Cancer

Metabolic Inhibitor Shows Greater Ability to Kill Pancreatic Cancer Cell Lines

HOUSTON, TX -- (Marketwired) -- 06/21/17 -- Moleculin Biotech, Inc., (NASDAQ: MBRX) ("Moleculin" or the "Company"), a preclinical pharmaceutical company focused on the development of anti-cancer drug candidates, some of which are based on license agreements with The University of Texas System on behalf of the M.D. Anderson Cancer Center, today announced the discovery of a metabolic inhibitor with the potential to treat pancreatic cancer.

"We've received a lot of attention from the scientific community for our glucose decoy technology (WP1122 Portfolio, *Moleculin Presents Preclinical Data of Novel Inhibitor of Glycolysis at 28th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics*, December 13, 2016) as a potential means to starve tumors to death by exploiting their hyper-dependence on glycolysis for energy production," commented Walter Klemp, Chairman and CEO of Moleculin, "and now we have identified possible new properties of our compound WP1234, a modification to WP1122. In pre-clinical testing, WP1234 has shown improved drug characteristics when compared with WP1122 and a 20 to 50-fold greater ability to kill pancreatic cancer cell lines when compared with traditional inhibitors of glycolysis. We know that pancreatic cancer thrives even in a reduced oxygen environment, which indicates it may be highly dependent on glycolysis to survive. This discovery now makes WP1234 a promising drug candidate to be studied for the treatment of pancreatic cancer."

Mr. Klemp continued: "Pancreatic cancer is still considered largely untreatable, so even modest gains in treating this disease could represent a significant clinical benefit. WP1234 improves on known inhibitors for glycolysis by increasing drug circulation time, which should increase the potential for drug uptake by and destruction of tumor cells. We are excited about the potential to pursue development opportunities with WP1234 for the treatment of pancreatic cancer. We are also pleased to report that this discovery was the direct result of our ongoing collaboration with M.D. Anderson Cancer Center and the science team there will be presenting detailed findings to the scientific community in the near future."

About Moleculin Biotech, Inc.

Moleculin Biotech, Inc. is a preclinical stage pharmaceutical company focused on the development of anti-cancer drug candidates, some of which are based on discoveries made at M.D. Anderson Cancer Center. Our lead product candidate is Annamycin, an

anthracycline being studied for the treatment of relapsed or refractory acute myeloid leukemia, more commonly referred to as AML. We also have two preclinical small molecule portfolios, one of which is focused on the modulation of hard-to-target tumor cell signaling mechanisms and the recruitment of the patient's own immune system. The other portfolio targets the metabolism of tumors.

For more information about the Company, please visit <http://www.moleculin.com>.

Forward-Looking Statements

Some of the statements in this release are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995, which involve risks and uncertainties. Forward-looking statements in this press release include, without limitation, the ability of WP1234 to become a safe and effective drug for pancreatic cancer in humans and the potential for that to translate into a significant clinical benefit. These statements relate to future events, future expectations, plans and prospects. Although Moleculin Biotech believes that the expectations reflected in such forward-looking statements are reasonable as of the date made, expectations may prove to have been materially different from the results expressed or implied by such forward-looking statements. Moleculin Biotech has attempted to identify forward-looking statements by terminology including "believes," "estimates," "anticipates," "expects," "plans," "projects," "intends," "potential," "may," "could," "might," "will," "should," "approximately" or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. These statements are only predictions and involve known and unknown risks, uncertainties, and other factors, including those discussed under Item 1A. "Risk Factors" in our most recently filed Form 10-K filed with the Securities and Exchange Commission ("SEC") and updated from time to time in our Form 10-Q filings and in our other public filings with the SEC. Any forward-looking statements contained in this release speak only as of its date. We undertake no obligation to update any forward-looking statements contained in this release to reflect events or circumstances occurring after its date or to reflect the occurrence of unanticipated events.

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